Appendix V - Best Management Practices

The following management practices were compiled from various sources listed in the reference section. These practices are listed as methods for correcting problems related to CCMA travel management and watershed issues associated with dust suppression, hazardous materials releases, and soil loss and erosion. Many of these management practices are specific measures which will need additional study to determine how or if they effectively apply to the specific conditions in the Clear Creek Management Area.

All of these management practices would need to be monitored and evaluated to determine their overall effectiveness and protection of human health and the environment. These management practices have been grouped into the following, broad categories: watershed restoration/management, barrens restoration/management, transportation and roads, abandoned mine lands (AML) and mining activities, and recreation facilities.

A. Watershed Management & Restoration

BLM'S watershed management goals related to soil loss are based on limiting sediment production from roads, trails, and disturbed areas (hill climbs, mining areas), avoiding vegetation and stream channel disturbance, and minimizing mass movement of soil into stream channels (from steep slopes and mining areas).

The following is a list of Management Practices (MP) that have been implemented and will continue to be implemented, practices that will be further developed, and management practices that will need further evaluation and planning prior to implementation. Continued implementation of management actions related to controlling erosion and sediment yield to minimize impacts to watershed resources are generally within the capability and budget constraints of the BLM. In all cases, BMPs will be identified that best address resource condition objectives and will be phased in over a period of time.

MP –1: Protection of Unstable Areas

Objective: To provide for protection of unstable areas and thereby avoid triggering mass movements of the soil mantle and resultant erosion and sedimentation.

Explanation: This management practice will help protect unstable areas by reducing or stabilizing their high erosion rates. Unstable slopes will be protected by use of fences and barriers to eliminate or channel vehicle use away from these areas, and by use of gully plugs, water diversions, etc. as needed.

MP- 2: Streamside Management Zone Designation

Objective: To designate a zone along streams where prescriptions are made that will minimize the adverse effects of nearby land disturbance activities including roads, by: (1) acting as an effective filter for sediment generated by erosion from road fills and dust drift; (2) maintaining shade riparian habitat (aquatic and terrestrial), and channel stabilizing effects; (3) keeping the floodplain surface in a resistant, undisturbed condition to limit erosion by flood flows.

Explanation: Activities near streams need to be carefully designed and managed. At designated roads and stream crossings, fill and side cast material must be kept at a distance from nearby streams to minimize their impact on the critical riparian zone and on the stream itself. Factors such as stream class channel aspect, channel stability, side-slope steepness, and slope stability are considered in determining the constraints of activities and width of stream side management zones. It is vital to stabilize till slopes before the stream side management zone is saturated with sediment. The streamside management zone is not a zone of exclusion, but a zone of closely managed activity. It is a zone which acts as an effective filter and absorptive zone for sediment, maintains shade, protects aquatic and terrestrial riparian habitats, protects channel and stream banks, and promotes flood plain stability.

MP – 3: Restrict Development within the Floodplain

Objective: To avoid, where possible, the long and short-term adverse impacts to water quality associated with the occupancy and modification of floodplains.

Explanation: A floodplain analysis and evaluation will be made when sites within floodplains are being considered for structures or developments. Environmental quality, ecological effects, and individual safety and health are considered. Flood frequencies, watershed conditions, climatic and environmental factors associated with past flood events, flood flow quantities and specific flood boundaries are all evaluated.

MP – 4 Specifying Riprap Composition

Objective: To minimize sediment production associated with the installation and utilization of riprap materials.

Explanation: Riprap is commonly used to armor stream banks, stream crossings, and drainage ways from the erosive forces of flowing water. Riprap must be sized and installed in such a way that it effectively resists erosive water velocities. Stone used for riprap should be free from weakly structured rock, organic material and materials of insufficient size, all of which are not resistant to stream flow and would only serve as sediment sources. Outlets of drainage facilities in erodible soils commonly require riprap for energy dissipation. The Corps of Engineers and Federal Highway Administration procedures are commonly used for designing riprap structures.

MP – 5 Re-vegetation of Surface Disturbed Areas

Objective: To protect water quality by minimizing soil erosion through the stabilizing influence of vegetation.

Explanation: This is a corrective practice to stabilize the soil surface of a disturbed area. The vegetation selected will be a mix of species best suited to meet the management objectives of the area, be it wildlife, recreation, watershed, or fuels management. Endemic species (grass or browse shrubs) may be used between recently planted trees where appropriate for aesthetics, erosion prevention or wildlife needs. The factors evaluated are soil fertility, slope, aspect, soil water holding capacity, climatic variables,

and suitable species selection. Re-vegetation of some disturbed areas in serpentine soils may not be feasible.

MP – 6: Watershed Restoration

Objective: To improve water quality and soil stability.

Explanation: Watershed restoration is a corrective measure to: (1) repair degraded watershed conditions and restore the hydrologic balance with a vegetative cover that will maintain or improve soil stability, reduce surface runoff, increase infiltration, and reduce flood occurrence and flood damages; (2) conserve the basic soil resource; (3) maintain and improve water availability; and (4) enhance economic, social, and scenic benefits of the watershed. Factors considered are: predicted change in water quality, downstream values, on-site productivity, threat to life and property, direct and indirect economic returns, and social and scenic benefits. Examples of watershed restoration measures are gabion structures, back filling gullies with rock, and constructing water diversions.

MP – 7: Erosion Control Structure Maintenance

Objective: To ensure that constructed erosion control structures are stabilized and working.

Explanation: Erosion control structures are only effective when they are in good repair and stable condition. Once the erosion control structures are constructed and seeded where practicable, there is a possibility that they may not become adequately vegetated or stabilized or they may become damaged from subsequent activities. It is necessary to provide follow-up inspections and structural maintenance in order to avoid these problems and insure adequate erosion control.

MP – 8: Abandoned Road and Trail Restoration and Reclamation

Objective: To improve water quality and soil stability.

Explanation: Route restoration is a corrective measure to: (1) repair degraded route conditions and restore the hydrologic balance with a vegetative cover that will maintain or improve soil stability, reduce surface runoff, increase infiltration, and reduce flood occurrence and flood damages; (2) conserve the basic soil resource; (3) maintain and improve water availability; and (4) enhance economic, social, and scenic benefits of the watershed. Factors considered are: predicted change in water quality, downstream values, on-site productivity, threat to life and property, direct and indirect economic returns, and social and scenic benefits. Examples of route restoration measures are soil de-compaction, vertical and horizontal mulching, transplanting and re-seeding vegetation, re-establishing natural drainage features and utilization of temporary water management features.

B. Barren Areas Management & Restoration

The purpose of this section is to present sediment and erosion control BMPs that are potentially applicable for active OHV play areas. Due to the unique conditions at the Clear Creek Management Area (i.e., topography, climate, soil types, vegetation, and recreational OHV use), the effectiveness of the

proposed BMPs is difficult to predict. There is very limited practical experience with BMPs for conditions similar to those found at Clear Creek.

In order to directly evaluate the efficiency of the proposed BMPs at Clear Creek, it is recommended that a BMP pilot program be implemented. Under the pilot program, the BMPs considered by BLM to be most feasible based on the available budget will be implemented on a limited scale. Each selected BMP is implemented at one or two sites that meet its applicability criteria and using different designs where possible. The effectiveness of each BMP is then evaluated over the course of one year. At the end of the evaluation, BLM will identify the most effective BMPs and designs and will expand their use at other sites with similar features within the Clear Creek Management Area.

MP – 9 Silt Fences

Objective: A silt fence consists of a geotextile fabric attached to supporting poles, which is used to intercept, reduce velocity, and filter surface runoff.

Explanation: Silt fences are effective in areas where sheet flow occurs for example, at lower end of active play areas, particularly at the interface between a play area and a vegetation buffer; base of slopes; and along streams. Silt fences provide retention of runoff sediments, decrease runoff flow velocity and energy, protect downslope vegetation from sedimentation and wash-out, and provide visual indication of play area lower boundary. Installation does not require construction equipment or skilled labor and is low cost.

MP –10 Erosion Control Blankets

Objective: Erosion control blankets are mats made of synthetic or natural material, or a combination of the two, which are stapled to the soil on steep slopes to control erosion and promote the establishment of vegetation.

Explanation: The use of erosion control blankets is limited to narrow strips adjacent to the lateral boundaries of vegetated areas located downgradient of active OHV use areas. In order for the blankets to be effective, the soil over which they are installed should be of sufficient quality to support vegetation growth. The soil surface must be relatively smooth, without rock, deep depressions, or debris. The blankets may be seeded to improve the vegetation establishment process. This BMP may be combined with the use of silt fences, which are described earlier in this section. A silt fence may be installed upgradient of a vegetated area and extended laterally to protect the erosion protection blanket strips. Benefits and advantages of erosion control blankets include: effective protection of soils on highly erodible slopes: they absorb and hold moisture near the soil surface; promote vegetation establishment; may be installed on steep slopes; and they do not require construction equipment or skilled labor.

MP – 11 Rock Backfilling of Gullies

Objective: Filling gullies with loose angular rock prevents further deterioration from water erosion.

Explanation: This practice is used primarily in naturally incised drainage channels that concentrate flow and significantly contribute to sediment generation and transport. This method may be combined with the check dam application where lower, more accessible sections of a

gully may be backfilled with rock and the check dams would be constructed at higher sections of the gully. Benefits of rock backfilling include: a decrease in runoff flow velocity and energy; retention of runoff sediment which, over time, may clog the void spaces and "heal" the gully; and maintenance can be minimal with proper construction.

MP – 12 Check Dams

Objective: Check dams decrease runoff flow velocity and energy and provide retention and settling of runoff sediments.

Explanation: Check dams are small structures made of logs, stone, or silt fence that are constructed across a gully or ephemeral stream in order to lower the speed, retain sediments, and diminish the erosion potential of concentrated flows. Installation does not require construction equipment or skilled labor and is low cost.

MP – 13 Interceptor Dyke and Swale

Objective: Interceptor dykes and swales are used to decrease runoff flow energy, protect downslope vegetation from sedimentation and wash-out, and provide visual indication of play area lower boundary.

Explanation: Dykes are ridges of compacted soil and swales are excavated depressions. A dyke is constructed adjacent and downslope of the swale from materials excavated for the construction of the swale. In most cases the swale is stabilized with riprap. Dyke and swale systems intercept overland flow and convert it into concentrated flow with lower, non-erosive velocity. The diverted flow is discharged to a suitable outlet. Dykes differ from silt fences in that it intercepts and diverts all runoff from upload areas, whereas, silt fences allow runoff to filter though the fence and reach lower areas.

MP – 14 Sediment Basins

Objective: Sediment basins provide retention of runoff sediments up to 60 to 70%, decrease runoff flow velocity and energy, and protect downslope vegetation from sedimentation and wash-out.

Explanation: A sediment basin is a pond created by constructing a dam across a drainage way, and is designed to detain runoff in order to allow suspended sediments to settle. The pond is provided with a riser connected to a discharge pipe, which ends downgradient of the dam. The pipe is placed perpendicular to and at the base of the water flow. In the pond, water accumulated until its level exceeds the height of the riser and the excess water discharges though the pipe to the downgradient outlet. The basin volume below the top of the riser is the sediment storage zone. The dam should be constructed of materials less permeable than gravel and clean sand. Local materials such as silty sand, clayey sand, and silt, are acceptable if they are free of debris. The storage volume may be increased by evacuation the area in from of the dam, and excavated materials may be used for the construction of the dam. The structure is provided with an emergency spillway to prevent water from flowing over the dam in flood conditions. The ratio between the basin length and width should be between 2:1 and 9:1.

MP – 15 Rock Filter

Objective: Rock filters provide retention of runoff sediments, decrease runoff flow velocity and energy, and create physical boundaries for OHV's.

Explanation: A rock filter consists of a berm of crushed rock (size 1.5 to 3 inches), wrapped in poultry wire (one inch diameter hexagonal mesh, galvanized 20 gauge), and placed parallel to topographic contour lines on a horizontal surface at the toe of a slope. The purpose of the rock filter is to intercept sediment laden runoff from disturbed areas of the site, reduce flow velocity, promote sedimentation, and release the water as sheet flow. Rock filters are low cost and require low maintenance.

MP – 16 Gabion Mattresses

Objective: To provide retention of runoff sediments, decrease runoff flow velocity and energy, and create a physical boundary for OHV's.

Explanation: A gabion mattress is a wire-mesh box filled with crushed rock. Typical mattress dimensions are: Height – six to nine inches; length – nine to twelve feet; and width – six feet. The purpose of gabion mattresses similar to that of the filter rock in which sediment laden runoff is intercepted from disturbed areas of the site, flow velocity is reduced sedimentation is promoted, and water is released as sheet flow. The main differences between mattresses and filter rock are: gabion mattresses may be placed on the slope before and after the slope break at the toe; gabion mattresses are more resilient; and mattresses are wider, resulting in better sediment trapping efficiency.

C. Transportation & Roads

MP – 17: Dust Mitigation Measures

Objective: Reduction of Chrysotile Emissions on Unpaved Roads and Trails

Explanation: Airborne chrysotile dust would attempt to be controlled through various mitigating treatments. Treatments would potentially range from base rock, frequent application of water, Lignosulfonate, Calcium chloride, petroleum products, liquid copolymers and synthetic organic soil binding fluid. A variety of suppliers are available. Efficacy would need to be established through field testing. Reapplication and maintenance schedules would be established through testing using manufacturers' recommendation as baseline. Fugitive airborne dust and sloughing may increase application to subjective intervals.

MP – 18: Stream course Protection

Objective: (1) To protect the natural flow of streams, (2) to provide unobstructed passage of storm flows, (3) to reduce sediment and other pollutants from entering streams, and (4) to restore the natural course of any stream as soon as practicable if the stream is diverted as a result of management activities.

Explanation: The following points are fundamental to protecting streams and stream courses:

a. Vehicles should not operate within stream side management zones except where trails and roads cross the stream channel.

b. Water bars and other erosion control structures will be located so as to prevent water and sediment from being channeled into stream courses and to dissipate concentrated flows.

c. Material resulting from temporary road and ORV trail stream course crossing should be removed and stream banks restored and protected to the extent practicable.

MP – 19: Road Stream crossings

Objective: To ensure that roads do not unduly damage streams or disturb channels.

Explanation: Culverts or other means are necessary on roads (temporary, semi-permanent, or permanent) at all locations where it is necessary to cross designated streams. Alternate means of crossing stream courses may include: rock fills, hardened fords (using such features as rocked approaches) and low water crossings. Most (if not all) crossings of perennial streams should be approved by an inter-disciplinary team. Such facilities should be designed to provide for unobstructed flows and to minimize damages to stream courses. The number of crossings should be kept to the minimum needs for access. Channel crossings should be as perpendicular to stream courses as possible. Stream bank excavation should be kept to the minimum needed for use of the crossings, and entry and exit ramps may need to be rocked. Fords and turnpike crossings hardened with washed rock or landing mats are sometimes an acceptable alternative depending upon hydrological considerations.

MP – 20: Road Slope Design

Objective: To reduce sedimentation by: (1) minimizing erosion from road slopes, and (2) minimizing the chances for slope failures along roads.

Explanation: No stabilization project can entirely prevent erosion from cut and fill slopes, but no road construction should be planned without considering stabilization needs. The first planning requirement is for an adequate soil and geologic investigation, to provide data necessary for proper cut and fill design consideration such as:

(1) The proper cut and full slopes for the material;
(2) The handling of surface and subsurface drainage;
(3) Necessary compaction standards and surfacing needs.

A prerequisite for stabilization is to provide basic mechanical stability of the soils, using data from soils and geologic investigations to develop requirements for proper slope angles, compaction, and adequate drainage.

MP – 21: Road Slope Stabilization

Objective: To improve road cut and fill slope stabilization by applying mechanical and vegetative measures.

Explanation: Few slopes are sufficiently rocky to be naturally stable without needing additional measures. In most cases mechanical, and/or vegetative measures are required. Mechanical measures include but are not limited to: erosion nets, terraces, wattling, side drains, sub-surface dewater devices, blankets, fute mats, riprap, mulch, tackifier pavement, soil seals, and gunnite. Vegetative measures include the seeding of endemic herbaceous species (grass, legumes, or browse species) or the planting of endemic brush or trees. Vegetative measures may include: fertilization, mulching (or even watering) to insure success. A combination of endemic vegetative species often produces a better result than a more simplistic treatment, e.g., grass seeding alone. (See also MP – 5).

MP – 22: Dispersion of Subsurface Drainage from Cut and Fill Slopes.

Objective: To minimize the possibilities of cut or fill slope failure and the subsequent production of sediment.

Explanation: Roadways may drastically change the surface drainage characteristics of a slope. Since the angle and height of cut and fill slopes increase the risk of instability, it is often necessary to provide subsurface drainage to avoid moisture saturation necessary because of slopes, soil, aspect, and precipitation. Methods that should be used:

(1) Pipe under drains
(2) Horizontal drains
(3) Stabilization trenches

Dispersion of collected water should be accomplished in an area capable of withstanding increased flows. On erosive soils, energy dissipaters need to be placed below pipe carrying large volumes of runoff water.

MP – 23 Control of Road Drainage

Objective: (1) To minimize the erosive effects of water concentrated by road drainage features; (2) to disperse runoff from disturbances within the road clearing limits; (3) to lessen the sediment load from road areas; (4) to minimize erosion of the road prism by runoff from road surfaces and from uphill areas.

Explanation: A number of measures can be used (alone or in combination) to control the detrimental effects of road drainage. Methods used to reduce erosion may include such things as properly spaced cross drains or water bars, dips, drop basins, energy dissipaters, aprons, downspouts, gabions, debris racks, and armoring of ditches and drain inlets and outlets. Disposal of runoff can be accomplished by such means as rolling the grade; out sloping; installation of water spreading ditches; contour trenching; or adequate sized over side drains, etc. Disposal of runoff also reduces peak down stream flows and associated high water erosion and sediment transport. Sediment loads can be reduced by installing such things as sediment filters, settling ponds, and contour trenches. Soil stabilization can help reduce sedimentation by lessening erosion on borrow and waste areas, on cut and fill slopes and on road shoulders.

MP – 24: Erosion Control on ORV Trails and Temporary Roads.

Objective: To protect water quality by minimizing erosion and sedimentation derived from ORV trails and roads.

Explanation: Installation of erosion control measures may be required on OHV trails and temporary roads. This work may involve cross ditches and water spreading ditches. Other methods such as back-blading may be used in lieu of cross drains. Volunteer groups may also be used for constructing erosion control structure projects.

MP – 25: Minimization of Sidecast Material.

Objective: To minimize sediment production originating from material sidecast during road construction or maintenance.

Explanation: Unconsolidated side-cast material is very difficult to stabilize and often such material is susceptible to erosion and / or mass instability. Sidecasting of un-compacted material should be permitted only at locations designated through interdisciplinary input, and shown in the plans. In some areas especially those slopes over 60 percent, end hauling may be the only acceptable alternative to sidecasting even though the costs are high and end-haul equipment may need certain minimum widths in which to work. Waste areas should be located where excess materials can be deposited and stabilized. During road maintenance operations, care should be taken to eliminate the deposition of sidecast material onto stabilized slopes. Disposal of slide debris should be done only at designated water areas. Personnel performing road maintenance should confine excavated or embankment material within the roadway limits and the roadway should be constructed in reasonably close conformity with the lines, grades, and dimensions designated on the ground. They should also remove materials deposited outside the roadway. All materials should be incorporated in the planned work. Disposal of excess excavation which develops due to miscalculation or a specific design change should be disposed of in a specified manner and at a specified location.

MP – 26: Maintenance of Roads

Objective: To maintain roads in a manner which provides for water quality protection by minimizing rutting, failures, sidecasting, and blockage of drainage facilities – all of which can cause sedimentation and erosion.

Explanation: Roads normally deteriorate because of use and weather impacts. This deterioration can be minimized through adequate maintenance and /or restriction of use. All system roads should be maintained to provide the basic custodial care required to protect the road investment and to see that damage to adjacent land and resources is held to a minimum. This level of maintenance often requires an annual inspection to determine what work, if any is needed to keep drainage functional and the road stable. This level is the normal prescription for roads that are closed or seasonally closed to traffic. As a minimum measure, maintenance must protect drainage facilities and runoff patterns. Higher levels of maintenance may be chosen to reflect greater use or resource administrative needs. Additional maintenance measures could include resurfacing, out sloping, clearing debris from dips and cross drains, armoring of ditches and spot rocking.

MP – 27: Control of Road Use During Wet Periods

Objective: (1) To reduce road surface disturbance and rutting of roads; and (2) to lessen sediment washing from disturbed road surfaces.

Explanation: The unrestricted and official use of many unimproved and semi-improved roads during wet weather often results in rutting and churning of the road surfaces. Run off from such disturbed road surfaces often carries a high sediment load. The damage/maintenance cycle for roads that are frequently used in winter can create a disturbed road surface that is a continuing sediment source. Roads that are used during wet periods should have a stable surface and/or sufficient drainage to allow such use with a minimum of resource impact. Rocking, oil, paving, and armoring are measures that may be necessary to protect the road surface and reduce material loss. Drainage should be maintained to prevent water from standing on the road surface or running down the road creating rills and gullies in the road surface.

D. Abandoned Mine Lands & Mining Related Activities

MP – 28: Regulation of Streamside Gravel Borrow Areas

Objective: To limit channel disturbances and sediment production associated with gravel source development.

Explanation: Materials deposited along channel sections during storm runoff often provide an inexpensive source of gravel. Because of easy access this gravel is often in demand; with adequate planning, it can often be removed with minimal impact on water resources. Under some circumstances, gravel removal may alter stream flow characteristics and consequently affect stream channel stability and create a new sediment source. Borrowing should be limited to gravel bars above the water line which is normal for the period of excavation. If the borrow area is subject to periodic flooding, some leveling, shaping, or other special drainage features should be provided. Excavation should not take place below the water table unless sediment basins are built to contain or catch the resulting sediment. Sediment basins should not be subject to washouts. If excess sediment accumulates in basins, excavators should be required to clean the basin and deposit removed sediment in approved sites. Serpentine areas should not be used as a gravel source for use outside of the serpentine area.

MP – 29: Restoration of Borrow Pits, Quarries, and Mining Operations

Objectives: To minimize sediment production from borrow pits, quarry sites and mining operations.

Explanation: Borrow pits, quarries, and mining operations are often susceptible to erosion due to steel side slopes, lack of vegetation, and/or their proximity to water courses. Whenever necessary, prior excavation of the site, top soil should be removed and stockpiled for surface dressing in the post operation rehabilitation period. Once excavation has been completed on all or part of the area, the sides will be sloped and graded and the general pit area smoothed and stabilized. Oversize material, if left in the pit or quarry, should be evenly distributed. Finer materials should be spread over the bottom of the pit prior to spreading stockpiled or imported top soil. Seeding and mulching may be required and

sediment basins should also be considered. Access roads to the site should be ripped, drained, blocked to traffic, and seeded unless other treatment is required by the design.

MP – 30: Environmental Health and Safety Hazard Awareness

Objective: Improve the level of visitor awareness of environment health and safety hazards, e.g., asbestos hazard in dust and water.

Explanation: The public will be encouraged through signs, pamphlets, media exposure and public contact to conduct their activities in ways that will not unnecessarily expose themselves to environmental hazards.

E. Recreation Facilities

MP – 31: Surface erosion Control at Facility Sites

Objective: Limit the amount of surface erosion taking place on developed sites and the amount of soil entering streams.

Explanation: On lands developed for campgrounds, parking areas or waste disposal sites much ground is cleared of vegetation. Erosion control methods need to be implemented to keep as much of the oils in place as possible and to reduce the amount of soil entering streams Some examples of erosion control methods that can be applied at a site for keeping the soil in place would be applying endemic species seed, jute matting, tackifiers, hydro mulch, paving or rocking of roads, water bars, cross drains, or retaining walls. To control the amount of soil entering streams, the natural drainage pattern of the area should not be changed. Sediment basins and sediment filters should be established to filter surface runoff. Diversion ditches and berms should be built to divert surface runoff around bare areas. Construction activities should be scheduled to avoid periods of the year when heavy runoff will occur.

MP – 32: Control of Sanitation Facilities.

Objective: To protect surface and subsurface water quality from bacteria, nutrients, and chemical pollutants resulting from collection, transmission, and disposal of sewage from Bureau of Land Management facilities.

Explanation: Toilet facilities are provided at semi-developed and developed recreation sites. Sanitation facilities will be planned, located, designed, constructed, operated, inspected and maintained to minimize the possibility of water contamination. Toilet facilities should be located outside of the flood plain.

MP – 33 Control of Refuse Disposal

Objective: To protect water quality from nutrients, bacteria, and chemicals associated with solid waste disposal.

Explanation: Users of public land recreation facilities are encouraged cooperate in the proper disposal of garbage and trash. Receptacles are provided at most semi-developed sites. Garbage and trash must be packed out by those who use dispersed areas. The final disposal of collected garbage will be at a proper designated and operated sanitary landfill. The land fill site will be located where groundwater and surface waters are at safe distances as prescribed by State or local Health Board regulations.